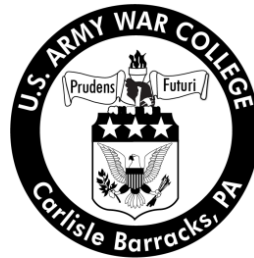


Strategy Research Project

Strategic Shock: Managing the Strategic Gap

by

Colonel Peter Jarrell Lane
United States Army



United States Army War College
Class of 2013

DISTRIBUTION STATEMENT: A

Approved for Public Release
Distribution is Unlimited

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
<p>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</p>					
1. REPORT DATE (DD-MM-YYYY) xx-03-2013		2. REPORT TYPE STRATEGY RESEARCH PROJECT		3. DATES COVERED (From - To)	
4. TITLE AND SUBTITLE Strategic Shock: Managing the Strategic Gap				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Colonel Peter Jarrell Lane United States Army				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Dr. James B. Bartholomees, Jr. Department of National Security and Strategy				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College 122 Forbes Avenue Carlisle, PA 17013				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution A: Approved for Public Release. Distribution is Unlimited.					
13. SUPPLEMENTARY NOTES Word Count: 8954					
14. ABSTRACT <p>The national security environment has grown increasing volatile, uncertain, complex, and ambiguous. Increasingly, threats to national security will be unconventional threats of context that arise from the environment. These threats will include dangerous strategic shocks with catastrophic effects that require the rapid reorientation of national priorities. In order to effectively plan for and respond to these threats, an integrated whole-of-government response will be required. Effective whole-of-government planning for and response to strategic shocks is a challenging undertaking, one for which our nation is currently ill-prepared. This paper defines and examines strategic shocks and threats of context, presenting examples of each and their impacts, examines the challenges the U.S. Government experiences in planning to prevent or mitigate the effects of strategic shocks arising from threats of context, and provides recommendations on how it can improve its ability to effectively manage our nation's future security challenges.</p>					
15. SUBJECT TERMS Strategic Surprise, Threats of Context, Forecasting, National Security Staff					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 46	19a. NAME OF RESPONSIBLE PERSON
a. REPORT UU	b. ABSTRACT UU	c. THIS PAGE UU			19b. TELEPHONE NUMBER (Include area code)

USAWC STRATEGY RESEARCH PROJECT

Strategic Shock: Managing the Strategic Gap

by

Colonel Peter Jarrell Lane
United States Army

Dr. James B. Bartholomees, Jr.
Department of National Security and Strategy
Project Adviser

This manuscript is submitted in partial fulfillment of the requirements of the Master of Strategic Studies Degree. The U.S. Army War College is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market Street, Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

The views expressed in this student academic research paper are those of the author and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government.

U.S. Army War College
CARLISLE BARRACKS, PENNSYLVANIA 17013

Abstract

Title: Strategic Shock: Managing the Strategic Gap

Report Date: March 2013

Page Count: 46

Word Count: 8954

Key Terms: Strategic Surprise, Threats of Context, Forecasting, National Security Staff

Classification: Unclassified

The national security environment has grown increasingly volatile, uncertain, complex, and ambiguous. Increasingly, threats to national security will be unconventional threats of context that arise from the environment. These threats will include dangerous strategic shocks with catastrophic effects that require the rapid reorientation of national priorities. In order to effectively plan for and respond to these threats, an integrated whole-of-government response will be required. Effective whole-of-government planning for and response to strategic shocks is a challenging undertaking, one for which our nation is currently ill-prepared. This paper defines and examines strategic shocks and threats of context, presenting examples of each and their impacts, examines the challenges the U.S. Government experiences in planning to prevent or mitigate the effects of strategic shocks arising from threats of context, and provides recommendations on how it can improve its ability to effectively manage our nation's future security challenges.

Strategic Shock: Managing the Strategic Gap

If such scenarios are sufficiently plausible and sufficiently worrisome—posing a credible and serious threat to American security—then senior national security decision makers should devote time and resources to address them.

—Andrew Krepinovitch¹
Military Futurist

In the fall of 1991, the George H.W. Bush cabinet struggled to develop policy responses to the collapse of the Soviet Union— a “strategic shock” that had caught the Bush administration and much of the world by surprise. The United States had faced its Cold War enemy since the end of World War II and developed, over time, an effective strategy of containment in response to the threat posed by the Soviet Union and its efforts to spread communism.² The U.S. Department of Defense had developed strategic plans to militarily respond to myriad Soviet military actions, up to and including nuclear war, and had built a well trained and well equipped military establishment whose primary focus was to contain Soviet expansion and deter a cataclysmic nuclear war. Despite decades of intense study of the Soviet system and suggestions that the internal inconsistencies it contained might one day cause the dissolution of the union, the U.S. Government did not possess a strategy to deal with the demise of the Soviet Union, the resultant newly independent states, or the transformed international environment.³

In the months and years following the collapse of the Soviet Union, the U.S. Government would have to dramatically reorient its strategy and develop the new policies required to effectively manage the new uni-polar environment. The U.S. Department of Defense (DoD), long focused on countering Soviet ambitions, would have to reorient and develop new strategies and organizational constructs to operate in

the dramatically changed security environment. The strategic shock created by the collapse of the Soviet Union arose not from the hostile designs of a foe (a threat of purpose), but was instead a threat that developed slowly over decades and emerged suddenly from the strategic environment (a threat of context⁴). Because the collapse of the Soviet Union required a dramatic reorientation of the U.S. Defense establishment, it was a defense-relevant threat. The collapse of the Soviet Union is illustrative of the challenges of forecasting and planning for strategic shocks arising from threats of context.

The U.S. Government, through its Department of Defense, is adept at conducting strategic planning for conventional military threats that can be categorized as defense-relevant threats of purpose or threats posed by hostile design or intention.⁵ The U.S. has struggled to forecast and conduct effective strategic planning to prepare for and respond to strategic shocks that are caused by unconventional threats, particularly those that develop from threats of context arising from conditions common to the environment itself.⁶ Unconventional shocks are the likeliest and most dangerous shocks that will occur in the future and often arise from the analytical “gap” that separates planning conducted for conventional contingency events and events that some would categorize as highly speculative because of their low likelihood of occurrence. This paper will define and examine strategic shocks and threats of context, present examples of each and their impacts, examine the challenges the U.S. Government experiences in planning to prevent or mitigate the effects of strategic shocks arising from threats of context, and provide recommendations on how it can improve its ability to prevent or mitigate strategic shocks when they do occur.

Strategic Shocks

As the example of the collapse of the Soviet Union illustrates, the occurrence of strategic shocks can have significant implications for nation-states and the international community at large. Whether the strategic shock is the collapse of a government, a devastating natural disaster, or a wealth destroying financial crisis, effectively forecasting strategic shocks can be difficult, and effectively responding to the events can be incredibly disruptive and expensive. Before looking at the sources of strategic shocks, it is important to define terms.

Peter Schwartz and Doug Randall suggest that despite the attendant astonishment when devastating surprises occur, they are in fact quite often inevitable. The underlying causes or developing trends are frequently known, but have not received the requisite attention until the inevitable became either eminent or has occurred.⁷ Schwartz and Randall describe strategic surprises as “game changing events” that have three key characteristics that separate them from run-of-the-mill surprises: they have “an important impact on an organization or country,” they “challenge conventional wisdom” to such an extent that it is difficult to convince others that they are even possible, and it is difficult to imagine what actions can be taken in response.⁸

When applied in a defense related construct, it is important to differentiate between the terms “defense-specific” and “defense-relevant” when applied to strategic shocks and the threats from which they arise. A defense-specific strategic shock is triggered by an explicitly military action and generates a military effect. A defense-relevant strategic shock arises from a non-military action or event, but results in a military effect or response. Nathan Freier, a Senior Fellow at the Center for Strategic

and International Studies (CSIS), expands on Schwartz and Randall's definition, applying a U.S. national security perspective in stating that a defense-relevant strategic surprise "forces DoD to act earlier than anticipated—often in unfamiliar or unexpected operating space—but still within established defense conventions."⁹ Defense-relevant strategic surprises, while disruptive to the national security establishment, are distinct from defense-relevant strategic shocks, which Freier says, "force sudden, unanticipated changes in DoD's perceptions about threat, vulnerability, and strategic response."¹⁰ While surprise generates evolutionary change in outlook and mission, shock triggers sudden revolutionary change in that it "redefines 'when,' 'where,' and 'how' DoD responds."¹¹ Armed with an understanding of what strategic shocks are, it is important to understand their origins.

The contemporary strategic environment is increasingly volatile, uncertain, complex, and ambiguous (VUCA) and will remain so for the foreseeable future. Many defense leaders and strategists believe that the most likely and potentially the most dangerous security shocks will be unconventional in nature. That is, that they will be challenges that are not in the traditional war fighting construct, but arise from conditions and involve contingencies that are defense-relevant. This is logical given the dramatic decline in the incidence of traditional state-on-state warfare over the last two decades and a perceived increase in threats arising from the activities of non-state actors and conditions in the security environment.¹² Unconventional shocks by their very nature are difficult to foresee. They occur in a "blind spot" or "gap" where uncertainty reigns.

Freier suggests that unconventional defense-relevant shocks occur in "conceptual territory between the well considered and the purely speculative."¹³ On the

planning continuum that extends from conventional contingencies to highly speculative but catastrophic events, DoD is well practiced at conducting planning for conventional contingencies and defense specific strategic surprises. At the far end of the spectrum where low likelihood, highly speculative but catastrophic shocks reside, some selective planning occurs. This is limited to events that can be envisioned and have such catastrophic effects that planning is deemed necessary as a hedge. An example of such planning is that conducted for a catastrophic meteor strike on Earth.¹⁴ The gap between the conventional and highly speculative receives minimal consideration or planning effort, and it is here that Freier suggests the greatest potential resides for strategic shocks. It is in this gap that resides the “unconventional ground where irregular, catastrophic, and hybrid ‘threats of purpose’ and ‘threats of context’ rise and combine and is the likeliest source of strategic shock for the nation and its defense establishment.”¹⁵

Threats of Purpose

Threats of purpose arise from the hostile design or intention of a foe that is intentionally acting to affect damage or harm. Threats of purpose may be either defense-specific or defense-relevant depending on whether military means are being employed. Defense-specific threats of purpose may be conventional or unconventional depending on the means or methods used by the foe. An example of a strategic shock triggered by a conventional defense-specific threat of purpose is the December 7, 1941, Japanese attack on Pearl Harbor that brought the U.S. into World War II.

In today’s security environment, unconventional shocks are perceived by many to be both more likely and more dangerous than conventional shocks. An example of an unconventional defense-relevant strategic shock arising from a threat of purpose is the

terrorist attack conducted against the World Trade Center and the Pentagon on September 11, 2001 (9/11). The terrorists did not use a military means to conduct the attack, instead they used civilian airliners as “flying bombs.” Historically, DoD planning efforts and resources have been focused on conventional defense-specific threats, while significantly less planning resources have been applied toward defense-relevant challenges, particularly those that are unconventional. Given the decreased likelihood of traditional warfare and the perceived increase in unconventional threats in the current environment, planning for unconventional threats is receiving greater emphasis in planning efforts.

The 9/11 attacks are illustrative of potential future purposeful shocks. Foes will increasingly look for ways to circumvent the traditional U.S. dominance in military capability. They will increasingly use asymmetric means to target perceived U.S. weaknesses and the threats of purpose seen will be increasingly “hybrid threats.” F.G. Hoffman defines hybrid threats as “any adversary that simultaneously and adaptively employs a fused mix of conventional weapons, irregular tactics, terrorism, and criminal behavior in the battlespace to obtain their political objectives.”¹⁶ Hoffman’s definition of hybrid threats describes many actors in the current security environment such as Hamas, Hezbollah, and the methods employed by the Taliban in Afghanistan against coalition forces. The increasing prevalence of non-state actors and state-sponsored actors in the current and projected future environment that will employ unconventional and hybrid methods are only some of the purposeful threats that could generate strategic shocks. Many security professionals believe that despite the challenges posed

by threats of purpose, particularly those that employ unconventional or hybrid methods, greater risks are presented by threats of context.

Threats of Context

Freier defined threats of context as threats “emerging in the absence of hostile purpose or design.”¹⁷ They are not the result of planning on the part of a foe, but arise from the environment itself. Because the specific nature or origin of contextual shocks is so difficult to foresee, their effects potentially so significant, and the development of effective responses so challenging, many deem them the “least understood and most dangerous.”¹⁸ Since contextual strategic shocks arise from the environment, there are ample examples of their occurrence in history.

Pandemic disease has, throughout human history, arisen to cause shocks to human demography and cultural development. An example is the Black Death, a Bubonic Plague outbreak from 1348-1350 that caused an estimated 75- 200 million deaths world-wide and killed between 30 and 60 percent of Europe’s population at the time.¹⁹ The continuing encroachment of man on remote areas of the world will expose human populations to new diseases resident in the environment. The increasing mobility of modern society will serve to speed the spread and magnify the effect of future disease outbreaks, increasing the likelihood of pandemic outbreaks that could serve as strategic shocks.

In more recent history, financial shocks have occurred, such as the Great Depression that began in 1929 and ended with the U.S. with the entry into World War II in 1941. This global economic depression varied in its severity from country to country, but had an enormous impact on the U.S. and Europe. In the U.S., the failure of more than 5000 banks between 1929 and 1933 wiped out more than \$7 billion in personal

savings. Corporate bankruptcies led to levels of unemployment that approached 25 percent of the American work force.²⁰ The significant contraction in the U.S. economy and worrisome levels of human suffering led the U.S. Government to dramatically reorient its priorities toward implementing programs that relieved suffering and attempted to stimulate recovery. The U.S. Army was involved in administering employment programs such as the Civilian Conservation Corps and the Public Works Administration. The Depression had more lasting impacts such as the rise of Keynesian economics as well as contributing to the conditions that set the stage for the rise of the National Socialist Party in Germany and the outbreak of World War II.²¹

The recent global recession serves to highlight the interconnectedness and fragility of the modern financial system. Globalization and increasingly linked trading markets and national economies have both contributed to the resilience of the international financial system and expanded the potential risk of shock across the system when there is a financial shock in one nation. The linked economies and financial networks have improved the ability of nations and external investors to provide assistance when there is a market anomaly or a financial crisis in a nation. This system of interconnected markets and economies has also increased the risk of spreading the shock across the system. In the past when a nation's economy failed, the effects were localized. In today's globalized economy, other parties are able to assist in staving off economic failure, but may also experience the financial shocks.

Natural disasters have, throughout human history, been the source of shocks that have dramatically affected empires and nations. Whether in the form of earthquakes, tsunamis, storms, floods, draught, or volcanic eruptions, natural disasters

have been either singular events or chronic conditions that have shaped the development of civilizations, dramatically changed economic activity, and caused the fall of governments. In the last century, over nine million lives were lost to flooding, and a flood of the Yellow River in 1931 caused the death of over four million people in China alone.²²

In modern history, man has increasingly had a role in causing shocks in the natural environment. Significant oil spills, chemical leaks, and nuclear accidents such as the reactor meltdown at Chernobyl have had dramatic impacts. As man's impact on the environment continues to expand, particularly in the area of global warming, this will increasingly be a potential source for shocks.

The United Nations Disaster Relief Organization has recognized the increasing combination of human behavior and natural events which contribute to the creation of disasters categorized as "complex disasters."²³ In addition to capturing the role technology may play, this categorization encompasses the magnifying role that civil strife and politically motivated actions can have on disasters. An example of a complex disaster is a significant Cholera epidemic that occurred in Uganda in 1979. The epidemic had significant effects in refugee camps in the nation. A civil war that year had displaced thousands of people into the camps. One of the primary causes of the civil war was an economic collapse triggered in part by a significant drought that had been ongoing since 1977.

Strategic shocks created by complex disasters will increasingly present challenges for the international community. The 2010 *Joint Operating Environment* produced by U.S. Joint Forces Command recognized the challenges presented by the

intersecting trend lines of expanding populations, increased urbanization, and increasing incidences of extreme weather events in certain regions of the world. In combination, they could produce levels of human misery that may challenge the capabilities of already fragile states.²⁴ Strategies to prevent or mitigate the occurrences of complex disasters must be multifaceted solutions to address the multiple complex issues at play. Having examined some of the different forms that threats of context may take, now let us examine how they may manifest themselves as strategic shocks.

Freier suggests there are two distinct paths to a defense-relevant shock. The first is a “rapid, unanticipated arrival” at a dangerous waypoint or endpoint of a “well-recognized and perilous trend line.”²⁵ This would suggest some significant change has occurred in the environment or condition that has precipitated the arrival of the shock. Defense-relevant shock can also arrive by a more difficult to predict “Black Swan,” a label that Nassim Taleb coined and that he defines as an outlier event, beyond the realm of regular expectation and carrying an extreme impact. Despite its status as an outlier, after its occurrence there are attempts to provide a context or explanation for why it happened.²⁶ Freier explains Black Swans as events that are “discontinuous breaks from trends altogether.”²⁷ Black Swans will occur in the future, and despite the prognostications of clairvoyants, they will be shocks that occur with little to no warning. There is often little that can be done to prevent them. Shocks that occur as a way point or endpoint on a trend line can be forecasted, but forecasting and acting on the forecasts present challenges for decision makers.

The critical first step in developing an effective method of managing the gap from which strategic shocks originate is an institutional recognition of the threat they pose to

U.S. interests and national security, and a commitment to integrate consideration of strategic shocks into national security planning. Recent indications by policy makers and initial steps toward conducting scenario-based studies examining strategic shocks indicate that the national security establishment has begun to break from its pre-9/11 views of national security as being focused on the purposeful threats posed by adversaries to a more comprehensive view of national security that incorporates the need to recognize and plan for threats of context.²⁸

To facilitate management of the strategic gap, security leaders must systematize the consideration of and planning for strategic shocks in strategic planning processes. Max Bazerman and Michael Watkins, in their book *Predictable Surprises*, provide a useful framework for considering how we should approach the consideration of strategic shocks.²⁹ They also illustrate some of the obstacles to effectively incorporating planning for strategic shocks. In *Blindside*, Francis Fukuyama covers much of the same intellectual territory with a specific focus on national security.³⁰

Defense strategy and planning have historically been very conservative. The DoD as an institution has focused almost exclusively on threats of purpose, and in this regard it has been challenged to break from convention to imagine the unconventional threats the nation faces in the future.

Policy makers must develop and institutionalize systematic processes to scan the environment in order to gather data and conduct analysis. Because shocks could arise from many different sources and manifest in different ways, this will require a whole-of-government approach to leverage the expertise resident in the different departments to provide a comprehensive interdisciplinary approach. In order to truly make this process

effective, it may be necessary to reorganize the national security system to break down the bureaucratic barriers that continue to exist in the interagency. The identification of anomalies and trends in a given area may in isolation be unremarkable, but in combination with other trends or data points may provide indications of the potential for strategic shock. The establishment of mechanisms to filter and integrate the disparate data flows into a holistic picture will be critical in forecasting strategic shocks. To guide collectors and analysts, it will be critical to visualize and develop scenarios of potential strategic shocks that break from current mental models, particularly those involving threats of context, that will enable identification of threat indicators.³¹

Identification of real risks from the constant stream of background noise will require overcoming a number of cognitive hurdles. Humans tend to undervalue future risks. Given the myriad threats and crisis that the National Security Staff (NSS) deals with daily, there is a natural tendency to discount the future.³² Imagination and extrapolation into the future is critical. This is a challenge for an NSS that is focused on current crisis, policy development, and staff support for the president. The NSS needs the capability to look into the future, develop and evaluate scenarios, and design long term prevention or mitigation strategies.

In analyzing potential strategic shocks, it is essential to identify trends that can be monitored and critical waypoints where reexamination or decision might be required. As trend lines become clearer and risks are better understood, it will be prudent to develop strategies to hedge risk. The development of hedge strategies may be very challenging as it may prove difficult to develop solutions to problems that have not manifested themselves. The development and decision to implement a hedge strategy is complex

and challenging. Policy makers must overcome the willingness to accept low probabilities of risk in the future with ill-defined costs, rather than accepting a sure cost now.³³ It is challenging to make significant investments, particularly in a fiscally constrained environment, for a future benefit whose value may be marginally understood. Both personally and institutionally, there is a bias toward the status quo that must be overcome.³⁴ Where systems still function, there is little catalyst for change other than leadership.

In a world of threats and competing demands for government resources, funding of hedge strategies will prove challenging.³⁵ In a political system that allocates resources, action often requires a constituency. In our political system, with defense industries that actively advocate programs that support procurement of their products, there may be stiff competition for the resources to prevent or mitigate potential strategic shocks. Other interests, both in and out of the bureaucracy, may be motivated to prevent or subvert hedging strategies for their own organizational or political benefit. A reorganization of the interagency may be one mechanism to reduce organizational competition for resources and establish a stronger constituency supporting hedging strategies.

An effective method for overcoming some of the challenges in managing the gap may be to partner with Inter-Governmental Organizations (IGO) and other partner nations that have an interest in developing and implementing hedging strategies. An example of this model is the international community's efforts to develop and implement a comprehensive strategy to combat global warming and deal with its effects. As Fukuyama suggests, "Hedging against future risks...also requires collective action,

specifically a sharing of decision-making authority and a pooling of resources across organizational and international boundaries.”³⁶ To assist in visualizing some of the challenges in identifying strategic shocks, actively monitoring deteriorating trend lines, and developing hedge strategies we will examine two scenarios for potential strategic shocks arising from threats of context.

Mexican Narco-Refugees

Scenario

A significant deterioration in Mexican central government control over regions adjacent to the U.S.-Mexico border in concert with significant escalation in “narco-violence” triggers a mass migration of Mexican nationals to the perceived “safe-haven” of cities on the U.S. side of the border. The magnitude of the migration exceeds the capabilities of the municipalities to absorb and support the influx of “narco-refugees.” Associated increases in “narco-violence” in U.S. municipalities taxes the capabilities of local law enforcement.

Background

Since 2006, when Mexican President Felipe Calderon declared war on Mexican drug cartels, there has been an escalating cycle of violence in the Mexican states along the U.S.-Mexican border, with over 34,000 Mexican citizens having been killed.³⁷ In 2012 alone, there were 12,394 deaths attributed to violence linked to organized crime.³⁸ The violence committed by the cartels has caused increasing levels of insecurity in Mexican cities and has, in many instances, caused deterioration in the capabilities of local and regional governments to effectively govern and secure the population against cartel violence.

In response to the escalating violence and deteriorating security situation, Mexican nationals have increasingly sought refuge in the U.S. While it is difficult to precisely measure the flow of illegal immigration the violence has caused, estimates suggest that the number is substantial. The Ciudad Juarez Citizens Security and Coexistence Observatory estimates that over 200,000 people have fled the violence in Ciudad Juarez alone, with over 124,000 estimated to have sought refuge in El Paso, Texas.³⁹ As the level of violence in Mexico has escalated, there has also been an increase in the number of Mexicans requesting asylum in the U.S. 2011 saw a new high for such requests with 5,551, which is an increase of more than a third above 2006 levels.⁴⁰ The number of asylum requests is particularly remarkable given that there were no Mexican requests for asylum in the 1990s.⁴¹ Despite the increase in requests for asylum, the U.S. grants only a small number of the requests; for example, granting only 165 of 2010's 3231 Mexican requests for asylum.⁴² The escalating levels of violence in Mexico and the associated flow of Mexican nationals across the border in the U.S. present challenges for the U.S.

Implications for U.S. Interests

U.S. interests are in a stable southern neighbor that is an active trade partner and a partner in combating the trafficking of illegal narcotics into the U.S. The U.S. Government has actively supported the Government of Mexico in its fight against the cartels as a part of efforts to counter the smuggling and distribution of illegal narcotics to the U.S. Violence associated with cartel narcotics smuggling has spread throughout the U.S., but is particularly high in the region bordering Mexico. As violence has escalated in Mexican border regions, there has been a steadily growing migration of Mexican

citizens across the border to perceived safe-havens. U.S. interests are to control this migration.

U.S. communities along the border are already experiencing the effects of the increased burden on both their public safety and public health systems caused by narco-refugees. A dramatic increase in the influx of narco-refugees that overwhelms local and state resources, will require national response. The challenge is in developing a strategy that effectively responds to the situation without undermining the authority and policies of the Government of Mexico. Any increase in granting of asylum requests provides recognition of a deteriorating situation in Mexico and may be perceived as a signal of a lack of confidence in the Government of Mexico's ability to achieve a successful outcome regarding the cartels. U.S. interests and policies will be further challenged if there are indications that the Government of Mexico's ability or will to continue the fight against the cartels has been compromised. There are trends we can monitor to provide indications of a deteriorating situation.

Trends/Indicators

Dr. Paul Kan in his book *Cartels at War* suggests a number of trends to monitor to provide indications of both deterioration in the ongoing conflict between drug cartels and the Government of Mexico and significant changes in the Government of Mexico's ability or intention to sustain its present campaign against the cartels.⁴³

1) A sharp increase in the proportion of Mexican homicides that include representatives of the state.⁴⁴ Historically, the victims of cartel violence have been cartel members, members of associated gangs, or private Mexican citizens. The intentional targeting of representatives of the Mexican state, to include members of the Mexican Armed Forces, would indicate a new form of escalation of the conflict. Incidences of

members of the Mexican military seeking asylum in the U.S., which has not occurred to date, or indications that the Mexican military has “returned to the Barracks” or essentially withdrawn from the campaign against the cartels would indicate both deterioration in Mexican Government control and that cartels have gained the upper hand in the conflict.

2) A dramatic increase in the number of educated and prosperous Mexicans fleeing Mexico and applying for asylum in the U.S.⁴⁵ This would indicate that the already poor security situation in some parts of Mexico is deteriorating. Whether due to narco-violence itself or associated criminal activity such as kidnapping, this trend would signal that the most prosperous and productive portions of Mexican society lack confidence in the government’s ability to sustain or win its campaign against the cartels.

3) A sudden decline in the Mexican economy associated with drug violence.⁴⁶ The economy of Mexico has already suffered significant effects from drug violence. Gabriel Cassillas, J.P. Morgan’s chief economist for Mexico, stated that in 2010 alone, the country lost approximately \$4 billion in investment due to companies reconsidering investments in Mexico because of drug related insecurity.⁴⁷ Declining investment activity may be an indicator of a number of negative developments. Unwillingness on the part of multi-national corporations to invest in Mexico may be an indicator of a lack of confidence in the Government of Mexico’s ability to win in the conflict. Declining investment in Mexico reduces the number of well paying employment opportunities for Mexicans. Significant decline in economic opportunities may indicate reduced employment opportunities for Mexicans, perhaps increasingly forcing them to pursue

legal or illegal immigration to the U.S. or potentially pushing them into the employment of the cartels.

4) A significant increase in violence aimed at national politicians in Mexico.⁴⁸ An increase in the targeting of national level politicians would be an indicator that the cartels have grown more aggressive in targeting high level government officials. This may be a result of aggressive Government of Mexico actions toward cartels, but this trend must be monitored as it may be a lead indicator that the Government of Mexico is under increasing cartel pressure and may be susceptible to policy changes.

5) Indications that the capital of Mexico City has become a zone of insecurity.⁴⁹ To date Mexico City has generally experienced low levels of cartel violence and activity. Escalation in levels of violence in the capital may be an indicator that security in previously unaffected areas has deteriorated or that the cartels are either increasingly desperate or have become emboldened. Ongoing high levels of violence may increase pressure on the Government of Mexico to modify its anti-cartel strategies.

U.S. Challenges in Developing a Strategic Response

Developing a strategy to prevent or mitigate the strategic shock associated with the scenario of a mass migration of Mexican nationals because of deteriorating security caused by escalating cartel violence presents significant challenges for the U.S. Government.

To develop a strategy to prevent or mitigate a potential strategic shock, the first challenge is recognizing the potential for strategic shock. Given the decades long U.S. efforts to stem Mexican illegal immigration and the smuggling/trafficking of illegal drugs from Mexico, and the elevated levels of narco-violence that have occurred in Mexico since the 1990s, it may be difficult to recognize that a fundamental change in the nature

of the problem has occurred. It is also challenging for decision makers to recognize that deteriorating trends may create the potential for shock. A NSS that is focused on the daily management of global crises will be challenged to identify and act on a future shock.

Because the effects of narco-violence and related immigration are concentrated in the states adjacent to the border, there are organizational and political barriers that must be overcome before implementing preventative or mitigating measures. The politicization of national immigration policy only complicates the challenges of recognizing and acting to prevent the potential for this strategic shock.

The NSS must be the integrator and manager of the interagency system, a place where disparate trends can be monitored and integrated into a comprehensive analysis of threats. This requires both a willingness on the part of members of the interagency to share data and analysis and a capacity in the NSS to analyze trends and integrate them into comprehensive threat analysis. This will be critical in monitoring the trends associated with the potential for mass migration. Because separate departments will be monitoring the trends that fall in their portfolio, the NSS must be where the separate trends are integrated to achieve an understanding of an approaching shock that requires planning to develop preventative or mitigating strategies. This management capability is lacking in the current NSS.

The most significant challenge in developing a strategy to prevent or mitigate this potential strategic shock is that it will require a whole-of-government strategy because it will require the synchronized actions of different elements of the government through the interagency system. Since the challenges of the narco-refugee scenario affect law

enforcement, border and immigration control, the public health system, local and state governments, local and national economies, national security, and relations between the governments of the United States and Mexico, a comprehensive response will be required.

Developing whole-of-government solutions has historically been very challenging for the U.S. Government. The interagency system was developed to meet Cold War requirements and has not been adapted to meet the new realities of today's global challenges. COL (Retired) Jack LeCuyer states that the departments and agencies in the interagency system "continue to resist these integrative (collaborative) whole-of-government efforts."⁵⁰ The agencies and departments jealously guard their resources and are resistant to linking those resources to whole-of-government plans that involve multi-year efforts because they have little bureaucratic incentive to do so. The NSS, which oversees the interagency, has little authority or ability short of presidential directive to lead the development of effective strategies against emerging threats because it "remains focused almost exclusively on policy development, staffing the president, and crisis management rather than the long-term strategic view".⁵¹

Aside from the bureaucratic turf battles that inhibit the development of an effective strategy, there is also a lack of capability to conduct effective strategic planning. LeCuyer states that a "government-wide lack of strategic planning and interagency operational planning capabilities among civilian agencies" is one of the most cited problems of the current interagency system.⁵² The NSS and interagency must develop an effective strategic planning capability that integrates all the elements of national power into strategies to prevent or mitigate looming strategic shocks.

Conflict over Water Resources in the Jordan River Valley

Scenario

Rapidly expanding Arab populations in the Palestinian Territories and Kingdom of Jordan, in combination with increases in Israeli population due to immigration, have reached levels that exceed the arid region's already scarce water resources. The increased water requirements due to population growth have led to significant declines in ground water levels in the region's aquifers. The declining ground water levels have caused deterioration in water quality due to increased concentration of industrial and agricultural chemical contamination and contamination due to inadequate treatment of human waste. The Arab population bears the brunt of the effects of the water crisis due to Israeli control of significant portions of the water resources. Concern over water shortages in the Arab population and increased incidences of waterborne illnesses have contributed to the tensions in the region. Arab protests and acts of violence against Israeli settlers may serve as the catalyst for Israeli military action in the Palestinian territories. The Kingdom of Jordan, which shares the use of the Jordan River with Israel, is experiencing similar water shortage issues. The kingdom is wracked with protests both in the Jordanian and Palestinian refugee populations over the water shortage and is under pressure to take action in response.⁵³

Background

The Director of National Intelligence's "Intelligence Community Assessment of Global Water Security" assesses that "during the next 10 years, water problems will contribute to instability in states important to US national security."⁵⁴ In the Middle East Region, which is perhaps the world's most water stressed region and more than 90 percent of the useable water crosses international boundaries, it is already a source of

instability.⁵⁵ In 1990, during a particularly dry period, King Hussein of Jordan stated that the only reason that might bring Jordan into a war again was water.⁵⁶ For the nations sharing the water resources and aquifers of the Jordan River Valley, access to and control of water resources has been a source tension and conflict for decades. The water resources shared by Israel, Jordan, the Palestinian Territories, and Syria are already insufficient to meet human demands for freshwater.⁵⁷ The growing populations of the riparian states, increased industrial and agricultural consumption, in combination with deteriorating quality of groundwater in aquifers are increasing tensions between the states. In this region that has already experienced multiple conflicts between both states and peoples; the pursuit of a final and enduring peace settlement that meets the interests of all parties has lasted years. Achieving this enduring peace will be elusive without addressing the water resource issues in the region, which while not a direct source of the conflict, are a significant complicating factor. The growing tensions over water resources could serve as a catalyst for conflict in the region in the near future.

The Middle East region is extremely arid and faces a constant scarcity of water due to meteorological, geographic, and demographic factors. The rainy season is short, with rainfall of 250-400mm annually, and is insufficient for meeting basic agricultural requirements of the region.⁵⁸ The principal source of usable water for the region is the Jordan River and its tributaries.

The Jordan River is approximately 350 km long and originates from three tributaries with origins on the slopes of Mount Hermon; the Dan originates in Israel and has a total annual flow of approximately 250 million cubic meters (mcm), the Banias originates from the Syrian Golan Heights that Israel annexed in 1984 and has a total

annual flow of approximately 120 mcm, and the Hasbani, which originates in Lebanon, has a total annual flow of approximately 130 mcm.⁵⁹ The confluence of the three tributaries lies inside Israel, north of Lake Huleh, and flows into Lake Tiberias (Sea of Galilee), which Israel uses as a reservoir for surface water storage. The Yarmuk River forms the border between Syria and the Kingdom of Jordan and flows westward, entering the Jordan River 10 miles below Lake Tiberias. The Yarmuk River has an annual flow of approximately 400 mcm.⁶⁰ The Jordan River has a total annual flow of around 1300 mcm and terminates in the Dead Sea.

In the 1950's, the Eisenhower Administration attempted to negotiate an agreement on allocation of Jordan River Valley water resources between the riparian states. While the effort, led by Ambassador Johnston, never reached a final agreement signed by all parties, the water use allocations that were negotiated have been accepted by the riparian states that use the allocations contained in what is known as the Johnston Plan.

Israel uses its National Water Carrier System to distribute the bulk of its allocation of Jordan River water. The network of pipeline, canals, tunnels, reservoirs, and pump stations originates at Lake Tiberias and transports water the length of Israel, approximately 130 km, to its terminus near Beersheba in the Negev Desert.⁶¹ Planned in the 1950s and completed in 1964, the carrier was intended to transport 340 mcm annually with 80 percent of the water allocated to support agriculture in the Negev Desert and 20 percent to be used for drinking water in Israeli cities. By the 1990s, the amount transported had increased to 450 mcm and the allocation had changed to 20

percent agricultural use and 80 percent for drinking water reflecting the dramatic increase in Israeli population during the period.⁶²

Israel and the Palestinians rely heavily on the two primary aquifers in the region. The Mountain Reservoir provides approximately 640 mcm of water supporting the central region and lies primarily under the Palestinian West Bank. The Coastal Aquifer provides approximately 330 mcm and supports coastal regions of Israel and the Palestinian Gaza Strip.⁶³ The aquifers suffer from overutilization due to the inability of rainfall recharge to replenish water drawn from the aquifers. This in combination with sea water intrusion has caused rising salinity levels, particularly in the Coastal Aquifer. Both aquifers also suffer from increasing penetration of agricultural chemicals and pesticides and the seepage of sewage that have deteriorated the quality of the groundwater. Much of the deteriorating of water quantity and quality can be attributed to the increased usage caused by dramatic population increases in the region.⁶⁴

Since the founding of the State of Israel in 1948, the population of the state has experienced a four-fold increase, growing from 2.375 million to 10.414 million in 2010.⁶⁵ The explosive population growth is due to high birth rates in the Israeli Arab and Palestinian population and Jewish immigration to Israel during the period. The World Bank projects increasing population growth in the future, estimating a population of 12.312 million by 2050.⁶⁶ The Kingdom of Jordan has experienced similar explosive population growth, with a population of 586,200 in 1952 growing to 4.2 million in the census conducted in 1995.⁶⁷ Jordan's population growth is primarily due to the influx of Palestinian refugees in the 1960s and the high birth rates in that population. The World Bank forecasts significant population growth in Jordan, projecting a population of 9.73

million by 2050. Such explosive population growth has severely taxed the finite water resources in the region. Demographic trends indicate a looming crisis in which the water resources will no longer support the region's population.

The Israeli control of water resources coupled with disparities in levels of water use between Israelis and Palestinian and Arab populations serve to heighten tensions. The Israelis, despite transferring limited authority to the Palestinian Authority in the 1995 Interim Agreement on the West Bank and the Gaza Strip, continue to exercise complete control of the water resources in those areas, and have prohibited the development of additional wells and water infrastructure. This lack of development of water resources in Palestinian areas for Palestinian consumption has resulted in dramatic disparities in consumption, with Israelis consuming on average 3 to 4 times per capita the water that is available to Palestinians.⁶⁸ The unfettered Israeli water consumption, particularly by the controversial settlers in Palestinian areas, in the face of Palestinian privation is a source of resentment and hostility between the two peoples.

The result is a classic story of supply and demand. The region is experiencing a declining usable supply of water in the face of rapidly growing demand. Given the historical animosity between the peoples and their past history of conflict, the increasing strain over water suggests that a shock is on the horizon if nothing is done.

Implications for U.S. Interests

The U.S. interest in the region is in maintaining stability and supporting our strategic partners, Israel and the Kingdom of Jordan. The U.S. has played an active role in the region for decades, mediating during conflicts and brokering peace negotiations in an attempt to achieve a final and lasting peace. Israel and Jordan are both U.S. trade partners as well as partners in maintaining stability in the region.

The unresolved conflict between Israel and the Palestinians, and U.S. support for the defense of Israel are complicating factors in U.S. efforts to maintain stability in the greater Middle East. The U.S. efforts to facilitate a peace settlement between Israel and the Palestinians have made little progress in recent years.

As environmental conditions in the region deteriorate and competition for access and control over water resources increase, the parties affected will look to the U.S. for assistance in mediating disagreements and for assistance in developing and resourcing solutions to the problem. Should the situation grow more acute and lead to conflict, the world will expect the U.S. to play a central role in reestablishing peace and developing solutions to address regional environmental challenges.

Trends/Indicators

There are a number of trends that can be monitored to determine whether the competition for water resources is reaching crisis levels in the region and may perhaps lead to conflict.

1) A significant decrease in rainfall. Rainfall in the region varies from 900-1500 mm per year in the Upper Jordan Valley to a mere trace in the region of the Dead Sea. A protracted decline in rainfall would not only affect the quantity of surface water flowing into the Jordan River, but also affect the groundwater available to recharge underground aquifers. The already stressed aquifers would experience a further deterioration in water availability and water quality. The overall quantity of water available for human use would decrease and might drive states to act to protect their populations and interests.

2) Indications of significant modification or development of water management infrastructure without multilateral consultation. An attempt by a state in the region to

change the status quo of water resource access and control in their favor at the disadvantage of other parties in the region would exacerbate the tensions over water resources. Arab efforts in the 1960s to divert significant amounts of water from the Jordan River caused Israeli leaders to warn that continuity of water flow was a vital national interest, and caused the Israelis to attack the work sites of water projects several times between 1965 and 1967.⁶⁹

3) Acts of sabotage against water management infrastructure. Given the critical role that water management infrastructure plays in enabling regional governments to meet their populations' water requirements, any attacks on that infrastructure could be construed as an act of war and would likely trigger actions in response. Incidents of sabotage and actions in response could quickly escalate into a broader conflict in the region.

4) Uncoordinated deviations from the Johnston Plan that established water usage levels for the Jordan River. Unilateral action to increase usage levels would come at the expense of the other riparian states and would illicit protests and possibly military action in response. Actions that endanger other states' ability to meet their populations' needs would result in enormous pressure on governments to take action.

5) Heightened levels of salinization and/or contamination of ground water. Annual usage of ground water exceeds the annual recharge in the two regional aquifers, and the resulting decline in groundwater levels has caused deteriorating water quality in both aquifers due to increased salinity and concentration of contaminants. Further degradation could signal impending conflict.

6) Increased levels of popular protest over water related issues. Increased levels of protest over access to water or water quality concerns would be a leading indicator that stresses over access to water is approaching a crisis level in the region, and might presage government action to change the water control paradigm.

U.S. Challenges in Developing a Strategic Response

Developing a strategic response to the scenario of conflict in the Middle East over water resources provides significant challenges for the U.S. Government. The U.S. Government has struggled for decades to broker a sustainable peace in this volatile, conflict filled region. A response to conflict over water resources would require new approaches, since past diplomatic efforts for peace have been focused on addressing other issues.

In this region that has had numerous wars in recent decades, it is easy to view the problem as one between two peoples over land and sovereignty. It is difficult for outsiders to recognize the role that competition for the finite water resources plays in the region. Understanding the critical role that water resources play in the conflict is essential to developing a lasting solution in the region.

Understanding the problem and the potential shock it might generate does not necessarily entail recognition of the need for a U.S. role in developing a solution. It is possible to minimize the need for a U.S. role in developing a solution to the challenge of water resources in the Middle East, but this would ignore the interconnection of the water and peace issues and the effect that the ongoing Israeli-Palestinian conflict, and the U.S. role in it, has on U.S. relations in this important region. The possible catastrophic effects of an expansion of the conflict to the greater region, as seen in the wars fought in the 1960s and 1970s and the possibility of the use of nuclear weapons

should spur U.S. interest in developing a strategy that maintains the peace. Given the preeminent role the U.S. plays in world affairs and in the region, U.S. leadership would be required to develop a solution.

Developing a strategy to address the competition over water resources is truly challenging. In an area where consumption exceeds the supply and ground water resources are being gradually diminished, it will be challenging to develop solutions that meet the needs of all parties. Clearly the solution must provide equitable access to available resources, but this does not resolve the problem of inadequate resources. Any strategy to address the resource challenge will, in the end, have to expand the availability of water to both populations. There are possible solutions that have been proposed such as the diversion of water from the Nile River or the transport via pipeline of water from Turkey, but either solution would be a complex technical and diplomatic undertaking that would come at significant cost.

Any strategy to resolve the water resource challenge in the region would require an integrated whole-of government approach. The NSS would have to harness and integrate the efforts of the State Department, USAID, the Department of Defense, the Department of the Treasury, and coordinate the efforts with the United Nations. Clearly, bringing the Israelis, Palestinians, Jordanians, and other necessary states into the planning effort would be challenging but essential. This complex problem will require a complex solution with the expenditure of significant effort and resources. It is an effort that many assess our NSS as being unprepared to undertake. The NSS would require authorities and resources that it does not currently have in order to initiate and sustain such an undertaking.

Gaining the participation of the large cast of U.S. Government agencies and departments and the other nations and International Organizations, to attempt to prevent or mitigate a potential strategic shock, no matter how obvious the impending shock is, will be a challenge. It would require the investment by the president of significant political capital merely to get all the actors to the table. It will require the breaking of organizational and national obstacles to develop a comprehensive strategy.

Any effort by the U.S. Government of this magnitude would require the support of the Congress and the American people. In an era when few recall how the Middle East conflicts of the 1960s and 1970s affected the geo-politics of the day and heightened tensions to the brink of war between the super-powers, it will be difficult to garner support. Given the political division in U.S. politics and the economic challenges our government and society face, convincing the Congress and U.S. public of the need for U.S. action will be a tough sell. Given the power that the Israeli lobby wields in Congress, it is easy to anticipate special interest groups attempting to avert any U.S. action. For those unable to see the consequences of future strategic shock in the Middle East, there seems little catalyst to change the status quo in this trouble region.

Changing the Status Quo

To effectively forecast, plan for, and manage strategies to prevent or mitigate future strategic shocks, particularly those arising from threats of context, it is clear that change is required in the U.S. national security establishment. We have seen in our examinations of strategic shock scenarios that the U.S. Government lacks an effective strategic planning process for national security. It lacks an interagency process that is able to effectively assess the future challenges of the international strategic environment and develop and manage whole-of-government strategies to address

those challenges. Many have studied and written on the problem, including the Project on National Security Reform (PNSR),⁷⁰ Colonel (Retired) Jack LeCuyer, and former Deputy Assistant Secretary of Defense for Strategy Michele Flournoy, and their writings provide a number of recommendations to change the status quo and prepare the U.S. for the many challenges presented by the complex security environment of the future, particularly emerging strategic shocks.

The redesign of the U.S. national security establishment to improve its effectiveness is a significant undertaking. The PNSR has conducted a thoughtful and comprehensive analysis of the national security establishment and provided recommendations in its publications *Forging a New Shield, Turning Ideas into Action*, and *The Power of People: Building an Integrated National Security Professional System for the 21st Century*.⁷¹ Their important recommendations are too extensive to cover in this study, but do directly address the deficiencies in the national security establishment that were identified in the examination of the strategic shock scenarios above. The most important avenues for action are discussed below.

As a nation we must fundamentally redefine national security. We must step away from our Cold War lineage that defined national security in the context of a military foe. We must expand our construct of national security to include the myriad threats found in today's volatile, uncertain, complex, and ambiguous environment, to include consideration of the disruptions posed by potential strategic shocks such as pandemics, natural disasters, financial contagion, and climate change.

We must recognize that to effectively plan for and manage the newly expanded portfolio of national security threats; we must design processes that support the

development and implementation of whole-of-government solutions. Only by harnessing and integrating the efforts of all government departments and agencies will we be able to identify future over the horizon threats. Our nation requires mechanisms to develop the interagency system into one with the requisite authorities and capabilities to prepare for and respond to future potential threats. To achieve improvements in the interagency system, the NSS must be reengineered and professionalized.

The NSS must evolve beyond its advisory role to the president to effectively serve as the manager of national security. In addition to expanding its ability to manage crisis, it must develop the ability to effectively scan the national security environment and forecast future threats. Only with expanded capabilities will the NSS be able to conduct analysis on future threat scenarios, identify and monitor trends, and conduct effective risk assessment that can then drive strategic planning.

Central to doing all this is redesigning our resource allocation mechanisms to break down bureaucratic barriers within departments and agencies and incentivize active support for the interagency process and make it as responsive and integrated as it needs to be.

Conclusion

The national security environment has grown increasingly volatile, uncertain, complex, and ambiguous with threats no longer arising solely from traditional military foes. Increasingly, threats to national security will be unconventional threats of context that arise from the environment. These threats will include dangerous strategic shocks with catastrophic effects that require the rapid reorientation of national priorities. In order to effectively plan for and respond to these threats, an integrated whole-of-government response will be required.

Effective whole-of-government planning for and response to strategic shocks is a challenging undertaking, one for which our nation is currently ill-prepared. The U.S. National Security Staff, and the interagency process it oversees, require significant reengineering to provide it the requisite authorities and capabilities to effectively manage our nation's future security challenges.

Endnotes

¹ Andrew Krepinovitch, *7 Deadly Scenarios* (New York, Bantam Dell, 2009), 10.

² The Executive Secretary, "NSC-68: A Report to the National Security Council." *Naval War College Review*, Vol. 27, no. 6, (May-June 1975), pp. 51-108., <http://www.usnwc.edu/NavalWarCollegeReviewArchives/1970s/1975%20May-June.pdf> (Accessed 27 December 2012).

³ X (George Kennan), "The Sources of Soviet Misconduct," *Foreign Affairs* 25, no. 4 (July 1947): 566-582., <http://faculty.txwes.edu/csmeller/human-prospect/ProData09/03WW2CulMatrix/ColdWar/Kennan1947Sov.html> (Accessed December 27, 2012).

⁴ Nathan Freier, *Known Unknowns: Unconventional "Strategic Shocks" in Defense Strategy Development* (Carlisle, PA: Strategic Studies Institute, 2008), <http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=890>, 13 (Accessed October 3, 2012).

⁵ *Ibid*, 2.

⁶ *Ibid*, 16.

⁷ Peter Schwartz and Doug Randall, "Ahead of the Curve: Anticipating Strategic Surprise," in *Blindside*, ed. Francis Fukuyama (Washington, D.C.: Brookings Institution Press, 2007), 93.

⁸ *Ibid*, 94.

⁹ Nathan Freier, *Toward a Risk Management Defense Strategy* (Carlisle, PA: Strategic Studies Institute, 2009) Accessed October 3, 2012, <http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=890>, 41.

¹⁰ Freier, *Known Unknowns*, 6.

¹¹ Freier, *Toward a Risk Management Defense Strategy*, 41.

¹² See Bruno Tertsis "The Demise of Aries: The end of War as We Know It?," *The Washington Quarterly* 35, no 3 (Summer 2012): 7-22. Tertsis discusses trends in warfare and cites U.N. data that shows a clear declining trend in state on state warfare.

¹³ Freier, *Known Unknowns*, 10.

¹⁴ Schwartz and Randall, "Ahead of the Curve," 98. Briefly discusses UN study of this scenario and NASA planning for this occurrence.

¹⁵ Freier, *Known Unknowns*, 13.

¹⁶ Hoffman, "Hybrid Threats," 443.

¹⁷ Freier, *Known Unknowns*, vii.

¹⁸ Ibid.

¹⁹ Suzanne A. Alchon, *A Pest in the Land: New World Epidemics in a Global Perspective*. (Albuquerque, NM: University of New Mexico Press, 2003), 21.

²⁰ David M. Kennedy, *Freedom From Fear: The American People in Depression and War, 1929-1945* (New York, NY: Oxford University Press, 1999) 162-164.

²¹ Ibid, 104.

²² Lewis Apteekar, *Environmental Disasters in Global Perspective* (New York, NY: G.K. Hall & Co., 1994) 14.

²³ Ibid, 22.

²⁴ Commander, US Joint Forces Command, Joint Futures Group (J59), *The Joint Operating Environment (JOE), February 18, 2010* (Suffolk, VA: US Joint Forces Command), 33.

²⁵ Freier, *Known Unknowns*, 9.

²⁶ Nassim N. Taleb, *The Black Swan* (New York, NY: Random House, 2007), xvii-xviii.

²⁷ Freier, *Known Unknowns*, 9.

²⁸ Freier, *Known Unknowns*, 25, references DoD's "strategic trends and shocks" initiative and the State Department's "Project Horizon" as examples. He describes 9/11 as a "game-changer for DoD, which combined with the on-going War on Terror have driven senior DoD leaders to "increasingly recognize the importance of defense-relevant shocks," 24-25.

²⁹ Max H. Bazerman and Michael D. Watkins, *Predicable Surprises*, (Boston, MA: Harvard Business School Press, 2004), 1-12. Bazerman and Watkins introduce processes organizations can adopt to predict and manage predictable surprises and examine some of the obstacles organizations encounter in doing so. Their theories and application are focused on the business environment rather than the national security environment.

³⁰ Francis Fukuyama, *Blindside* (Washington, D.C.: Brookings Institution Press, 2007), 169-172.

³¹ Schwartz and Randall, "Ahead of the Curve," 101.

³² Bazerman and Watkins, *Predicable Surprises*, 6.

³³ Ibid.

³⁴ Ibid, 7.

³⁵ Fukuyama, *Blindside*, 171.

³⁶ Ibid.

³⁷ Nicholas Casey, "Asylum Requests Put U.S. in Tough Spot," *Wall Street Journal*, March 10, 2011 at <http://online.wsj.com/article/SB100001424052748704629104576190923523249488.html> (accessed 10 January 2013).

³⁸ "Organized Crime Behind 12,394 Deaths in Mexico in 2012," *Latin American Herald Tribune*, January 10, 2013, at <http://www.laht.com/article.asp?categoryId=14091&articleId=660084> (accessed 10 January 2013).

³⁹ "Over 200,000 Leave Mexico Border City," *Latin America Herald Tribune*, October 14, 2010, at www.laht.com/article.asp?ArticleId=367604&CategoryId=14091 (accessed 9 January 2013).

⁴⁰ Patricia Giovine, "More Mexicans Fleeing the Drug War Seek U.S. Asylum," *Reuters*, 14 July 2011, at <http://reuters.com/assets/print?aid=USTRE76D2T620110714> (accessed 10 January 2013).

⁴¹ Paul R. Kan, *Mexico's "Narco-Refugees": The Looming Challenge for U.S. National Security* (Carlisle, PA: Strategic Studies Institute, 2011), <http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?PubID=1083>, 2, (Accessed 27 December 2012).

⁴² Giovine, "More Mexicans Fleeing."

⁴³ Paul R. Kan, *Cartels at War* (Dulles, VA: Potomac Press, 2012), 123-126.

⁴⁴ Ibid, 123.

⁴⁵ Ibid.

⁴⁶ Kan, "Narco-Refugees," 21.

⁴⁷ Nicholas Casey and James Haggerty, "Companies Shun Violent Mexico," *Wall Street Journal*, December 17, 2010, <http://online.wsj.com/article/SB10001424052748703395204576023811983098994.html> (accessed 2 January, 2013).

⁴⁸ Kan, *Cartels at War*, 124.

⁴⁹ Kan, "Narco-Refugees," 24.

⁵⁰ Jack A. LeCuyer, *A National Security Staff for the 21st Century* (Carlisle, PA: Strategic Studies Institute, 2012), 18, at <http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=1142>, (Accessed 10 January 2013).

⁵¹ Ibid, xiii.

⁵² Ibid, xi.

⁵³ Population data and forecasts for the region are available at <http://isrealipalestinian.procon.org/view.resource.php?resourceID=000636&print=true> (accessed 13 January 2013), <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION/EXTDATASTATISTICSHNP/EXTHNPSTATS/0,,contentMDK:21737699~menuPK:3385623~pagePK:64168445~piPK:64168309~theSitePK:3237118~isCURL:Y,00.html> (accessed 13 January 2013), and Ghaith H. Fariz and Alia Hatough-Bouran, "Case Study: Jordan Population Dynamics in Arid Regions: The Experience of the Azraq Oasis Conservation Project," at <http://www.aaas.org/international/ehn/waterpop/jordan.htm> (accessed 13 January 2013). Alwyn R. Rouyer, *Turning Water into Politics* (New York, NY: St. Martin's Press, 2000), provides a thorough examination of water resources in the region (19-25), current consumption data (25-31), and analysis of the impending water crisis (31-38).

⁵⁴ Director of National Intelligence, "Global Water Security: Intelligence Community Assessment" (Washington, D.C.: Office of the Director of National Intelligence, 2012), at <https://s3.amazonaws.com/s3.documentcloud.org/documents/327371/report-warns-that-water-shortages-could-threaten.pdf> (accessed on 9 January 2012), iii.

⁵⁵ Kevin Watkins and Anders Berntell, "A Global Problem: How to Avoid War over Water," *New York Times*, August 23, 2006 at http://www.nytimes.com/2006/08/23/opinion/23iht-edwatkins.2570814.html?pagewanted=all&_r=0 (accessed 9 January 2013).

⁵⁶ Patrick Cockburn, "Hussein Vents His Anger at Israel," *The Independent*, May 15, 1990.

⁵⁷ Jeff Albert, "'Unconventional Supplies' and the Water Dispute Among the Riparians of the Jordan River Watershed," *Journal of Contemporary Water Research and Education* 118, no. 1 (2001): 44.

⁵⁸ Lilach Grunfeld, "Jordan River Dispute," Inventory of Conflict and Environment Case Study 6, American University, Spring 1997 at <http://www1.american.edu/ted/ice/jordan.htm>, (accessed 9 January 2013).

⁵⁹ Water flow data is extracted from Table 1.1 in Alwyn R. Rouyer, *Turning Water into Politics* (New York, NY: St. Martin's Press, 2000), 19.

⁶⁰ Miriam R. Lowi, *Water and Power* (New York, NY: Press Syndicate of the University of Cambridge, 1995), 28.

⁶¹ Ibid, 116-118.

⁶² Alwyn R. Rouyer, *Turning Water into Politics* (New York, NY: St. Martin's Press, 2000), 156.

⁶³ Ibid, 19.

⁶⁴ Ibid, 32.

⁶⁵ Population statistics are drawn from Israeli population data accessed at <http://isrealipalestinian.procon.org/view.resource.php?resourceID=000636&print=true> (accessed 13 January 2013).

⁶⁶ Population projections are drawn from data available at <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION/EXTDATASTATISTICSHNP/EXTHNPSTATS/0,,contentMDK:21737699~menuPK:3385623~pagePK:64168445~piPK:64168309~theSitePK:3237118~isCURL:Y,00.html> (accessed 13 January 2013).

⁶⁷ Jordanian population data is drawn from Ghaith H. Fariz and Alia Hatough-Bouran, "Case Study: Jordan Population Dynamics in Arid Regions: The Experience of the Azraq Oasis Conservation Project," at <http://www.aaas.org/international/ehn/waterpop/jordan.htm> (accessed 13 January 2013).

⁶⁸ Rouyer, *Turning Water into Politics*, 26.

⁶⁹ Miriam R. Lowi, "Bridging the Divide: Transboundary Resource Disputes and the Case of West Bank Water," *International Security* 18, no. 1, (1993): 124.

⁷⁰ The Project on National Security Reform is a nonpartisan, nonprofit organization founded in 2006. It received a mandate and funding from Congress to recommend improvements in the national security system.

⁷¹ Project on National Security Reform, *Forging a New Shield* (Arlington, VA: PNSR, November 2008); Project on National Security Reform, *Turning Ideas Into Action*, (Arlington, VA: PNSR, September 2009); Project on National Security Reform, *The Power of People: Building An Integrated National Security Professional System for the 21st Century* (Arlington, VA: PNSR, November 2010).

